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Synergy Between Motivation, Innovation, and Facilities in Improving Educational Outcomes: An Analysis of a Study at MA Annur 3 Bululawang

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Synergy Between Motivation, Innovation, and Facilities in Improving Educational Outcomes: An Analysis of a Study at MA Annur 3 Bululawang

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Abstract

This study is motivated by the importance of motivation, innovation, and learning facilities in supporting the educational process in schools. The study aims to identify issues related to motivation, innovation, and learning facilities in schools. Its primary focus is to determine the extent to which learning motivation, innovative practices, and school facilities impact the quality of education, particularly at MA Annur 3 Bululawang. The research employs a qualitative method with instruments including interviews, observation sheets, and documentation. The subjects of the study are male students of grade XI at MA Annur 3 Bululawang. The results show that, based on interviews with the biology teacher, students' learning motivation is still relatively low, the learning facilities at the school are incomplete, and innovation in the teaching and learning process is lacking. However, different findings were obtained from student questionnaires and observation sheets, which revealed that students' learning motivation reached 72%, scientific facilities scored 82%, and learning innovation scored 67.6%, all categorized as fairly good. This study highlights the need for synergy between teachers, students, and school management to enhance motivation, availability of facilities, and learning innovation for improved educational quality. It is hoped that this research will encourage more interactive and participatory learning by employing methods that actively engage students, such as project-based learning, group discussions, and simulations.

Keywords: Learning facilities; Learning innovation; and Student learning motivation

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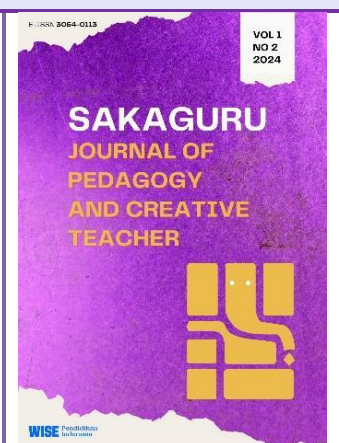
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INTRODUCTION

In the era of 21st-century education, the quality of learning does not solely depend on the curriculum but also on various supporting factors such as students' learning motivation, the availability of scientific facilities, and the implementation of innovative teaching methods in schools [1]. Learning motivation acts as a driving force for students to engage more actively in exploring knowledge, while scientific facilities provide the means for students to apply concepts practically [2], [3]. Furthermore, innovation in teaching plays a significant role in creating methods that are engaging, relevant, and contextual for students [4], [5].

Learning motivation refers to the desire and willingness of students to engage with learning materials and activities Woo et al. High motivation encourages students not only to receive information but also to process, analyze, and deepen their understanding of the subject matter [6]. Learning motivation also helps reduce laziness or boredom often encountered during the learning process and enhances students' enthusiasm for school activities [3], [7]. Motivated students tend to be more active in the learning process and have a greater drive to explore the material [8]. However, low learning motivation remains a significant challenge in the field of education [9]. Several factors contribute to this issue, such as learning materials perceived as irrelevant or uninteresting by students [10], [11]. When students feel that the content being studied lacks connection to their lives or cannot be applied in real-world contexts, they tend to lose interest in learning [12], [13]. Additionally, monotonous and less varied teaching methods, such as one-directional lectures, can make students feel bored and less engaged in the learning process [14], [15]. According to Hendrizal, low learning motivation among students is caused by monotonous and unappealing teaching methods, unclear curriculum goals and teaching objectives, and personal problems students may face with parents, peers, or their environment [16].

The impact of low learning motivation is significant, both academically and psychologically [17]. Rahman notes that academically, students with low motivation tend to experience a decline in performance as they do not strive harder to understand the material [18]. Such students often do not actively participate in learning, fail to complete assignments diligently, and lack depth in understanding the content [15]. Psychologically, low motivation can lead to frustration, reduced self-confidence, and a loss of interest in learning [19], [20]. In some cases, the issue of low learning motivation results in apathy toward education as a whole [21], [22]. Moreover, adequate learning facilities play a crucial role in supporting the learning process of students [23]. Learning facilities include comfortable classrooms, technological devices, laboratories, libraries, as well as sports and arts amenities [24], [25]. The presence of complete facilities can create a conducive environment for students to learn and develop to their fullest potential [26], [27]. For instance, classrooms equipped with technologies such as projectors and interactive boards can help students better understand the subject matter [28]. Additionally, science and computer laboratories can enrich students' practical learning experiences [29]. Quality facilities not only enhance students' learning motivation but also assist teachers in delivering material in more varied and engaging ways [28].

Limited facilities, whether in terms of classrooms, teaching aids, or technological devices, can hinder effective teaching and learning processes [29]. Limited facilities can result in decreased interest and motivation among students to engage in learning, as they may find the methods applied challenging or unappealing [26]. Without adequate technological tools, students may struggle to access learning materials optimally, rendering the learning process suboptimal [27]. Furthermore, limited facilities constrain teachers' creativity in developing more innovative and interactive

teaching methods [30]. Therefore, fulfilling adequate learning facilities is vital for creating a conducive learning environment and improving overall educational quality [31].

Innovation in teaching is also essential to address the challenges of globalization and modern developments [4]. According to Supriansyah & Ninawati, innovation is characterized by novelty, planning, and specific advantages and goals [32]. Innovations in education include continuously evolving curricula, numerous teaching methods and models, and the creation of various teaching media [33]. These approaches enable students to actively engage in learning while fostering the development of critical thinking, creativity, and collaboration skills [34]. However, many teachers have not yet implemented these innovations due to limited training or a lack of technological support [5]. Students' learning motivation can be enhanced through innovative teaching that also optimally utilizes scientific facilities [35]. When students are exposed to engaging and relevant teaching methods, they feel more motivated to learn. Adequate scientific facilities, such as laboratories and technological tools, provide students with opportunities to connect theory with practice directly [5], [21]. Therefore, the synergy between motivation, scientific facilities, and teaching innovation is crucial to creating meaningful learning experiences that are relevant to the demands of the times. This will improve overall educational quality.

Students' learning motivation, the availability of scientific facilities, and the application of innovative teaching methods are interconnected and play a pivotal role in creating meaningful learning experiences that equip students with the skills needed to navigate increasingly complex global challenges [3], [34]. While numerous studies have explored the individual significance of learning motivation, facilities, and teaching innovations [16], [28], there remains a lack of research addressing the interplay of these three variables within the context of Islamic education at the secondary level. Consequently, this study seeks to examine the challenges related to learning motivation, facilities, and teaching innovations and to assess the extent to which these factors collectively influence the quality of education, with a specific focus on MA Annur Bululawang.

METHODS

This research employs a qualitative approach by collecting data through three main research instruments: interviews, questionnaires, observation sheets, and documentation.

Research Design

This study adopts a qualitative approach aimed at exploring the influence of teaching innovations, student motivation, and learning facilities on the learning process. The qualitative nature of the research allows for an in-depth understanding of the teachers' perspectives and the students' experiences, offering valuable insights into how these factors contribute to the overall educational process.

Population and Sample

The population of this study consists of biology teachers and students at MA Annur 3 Bululawang. The sample for the interviews includes biology subject teachers, while the sample for the observation sheets and questionnaires consists of 25 male class XI students. These students are chosen to represent the broader student body, providing insights into their learning motivation and engagement with the facilities and innovations available.

Location and Timing

This study was conducted at MA Annur 3 Bululawang. The data collection process took place on November 13, 2024, during which the researcher interacted with the participants, conducted interviews,

distributed questionnaires, and observed student engagement. The documentation also includes photographs that depict the condition of the laboratory facilities used in biology learning.

Research Procedure and Instruments

The research employs multiple instruments to gather comprehensive data:

- Interviews: Conducted directly with biology teachers to explore their views on teaching strategies, student motivation, and innovations in the learning process.
- Observation Sheets: Used to assess how motivated and engaged students are with the learning process and the available facilities.
- Questionnaires: Distributed to 25 male class XI students to evaluate their learning motivation.
- Documentation: Includes photographs of laboratory facilities to provide visual data on the condition and availability of teaching resources.
- All instruments were validated and adapted from reliable sources to ensure the data's relevance and accuracy.

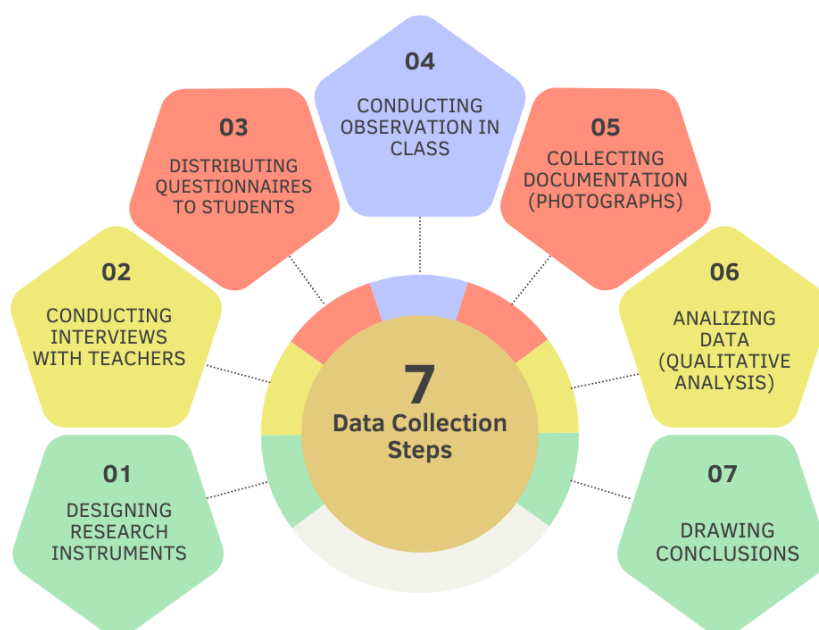


Figure 1. Flowchart of Data Collection Steps

Data Analysis Techniques

Data collected from interviews, questionnaires, observation sheets, and documentation are analyzed qualitatively. The analysis aims to identify patterns, themes, and insights that explain how teaching innovations, student motivation, and the availability of facilities contribute to the learning process. The triangulation of data sources ensures a comprehensive and accurate interpretation of the findings.

Impact Evaluation

The study will assess the impact of teaching innovations, student motivation, and available facilities on the learning experience at MA Annur 3 Bululawang. By analyzing the collected data, the research will evaluate how these factors contribute to the overall effectiveness of the

learning process and identify areas for improvement. The findings will inform educational strategies aimed at enhancing the quality of education in the school. This approach enables the researcher to draw a clear picture of the factors influencing the biology learning process and provides actionable insights for educational improvement.

RESULT AND DISCUSSIONS

Result and Discussions

This research aimed to examine the problems that arise in the biology learning process of male students at MA Annur 3 Bululawang. Based on observations and interviews with biology teachers and students, three main problems were identified as the focus of this study. Data from observations and interviews were used as a basis for developing a questionnaire distributed to male students to measure these three problems. The main problems identified included students' learning motivation, school's scientific facilities, and students' learning innovations.

Students' Learning Motivation

The first problem is students' learning motivation, which is one of the psychological aspects that help and encourage someone to achieve their goals [36]. Male students' motivation in following the learning process is still low, so they often lack enthusiasm during learning. The lack of students' learning motivation is caused by the school environment that demands continuous learning. This is because the learning load and activities in the boarding school for male students are more intensive than for female students. Another factor that causes male students to lack learning motivation is homesickness, as students who live in boarding schools are of course far from their families.

Students' learning motivation is influenced by two main factors, namely intrinsic and extrinsic [37]. Intrinsic factors come from within the individual, such as the desire to achieve success and self-perception. Conversely, extrinsic factors come from outside, such as environmental support, family, and peers. According to Maslach & Leiter [38], boredom due to a high learning load can reduce students' interest in tasks, thus decreasing learning motivation. A similar thing was conveyed by Meier & Schmeck in Permatasari et al., [39] who stated that learning boredom triggers negative behavior, including decreased motivation.

The school environment as an extrinsic factor plays an important role in influencing students' learning motivation to be more optimal [40]. Halawa & Fensi [41] and Prabasari & Subowo [42] stated that there is a positive correlation between the school environment and students' learning motivation. It can be said that the better the school environment created, the higher the students' learning motivation. Therefore, school policies are needed that balance the activities of male students between activities at school and in the boarding school so that students do not feel burdened. In addition, to reduce students' homesickness, students can be given the opportunity to go home every two weeks.

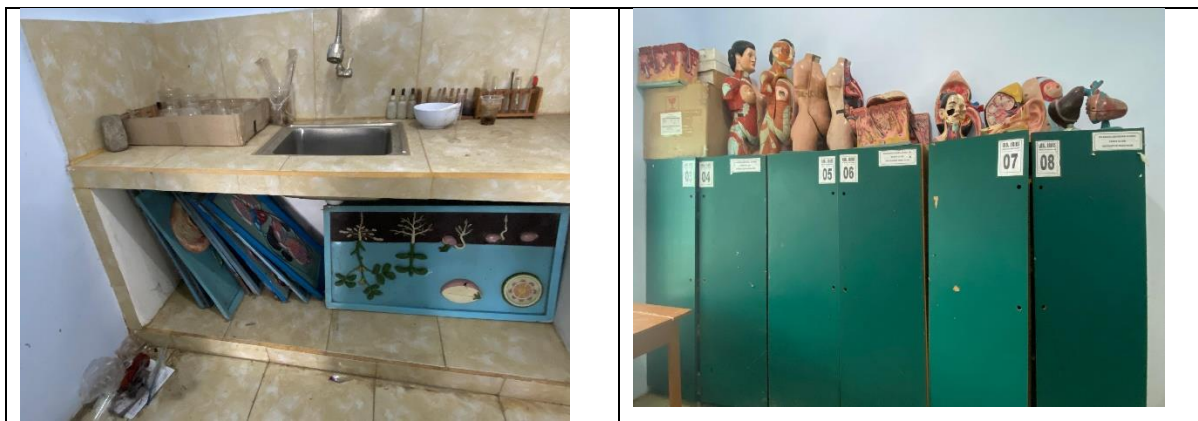
Laboratory Facilities

Limited of tools and materials for practicum are a problem faced by schools. Practicum is not only learning on the process of the occurrence of things that are practiced, but it is more

deepened by knowing how certain processes or parts occur. In overcoming this limitation, of course, there are several solutions made by the teacher. One way is for the teacher to personally purchase tools and materials that can be purchased for practicum purposes, so the teacher will buy them directly. For example, during the practicum of DNA isolation where the material that should use alcohol can be replaced with methanol. Purchases of materials made by teachers personally can be submitted for reimbursement provided that there is a receipt.

Table 1. Available laboratory Equipment





Overcoming the limitations of tools and materials in school laboratories can be done by using Virtual Laboratory as a substitute for practicum in the laboratory. According to several studies, the use of Virtual Laboratory (VL) in learning biology, one of which has been carried out by [36] from his research obtained the conclusion that the use of Virtual Laboratory (VL) can improve students' science process skills. Another study was conducted by [37] with the conclusion that the use of Virtual Laboratory (VL) can improve students' scientific attitudes. It can be concluded that if the tools and materials are inadequate then it can use Virtual Laboratory (VL) to overcome this.

Innovation in Learning

The Lack of student interest in learning the material so that one way to overcome these problems is to increase the practicum. If in the learning process students are less interested and do not pay much attention to the teacher's explanation, it will be more productive to show videos, whether it is a practicum procedure or others. Through watching the video, questions will arise by students. Students emphasize the kinesthetic way of learning with the teacher as an encourager. Students prefer the method given by the teacher by directly observing the interesting things they encounter.

In the learning process, the role of media is very important to attract students to stay active during learning. In addition, media selection must also be considered in accordance with the material to be taught. According to [38] learning media is needed that can eliminate student boredom in learning biology lessons, one of which is the use of appropriate learning video media. This is in line with the development of technology at this time which is very rapid and this must be mastered by an educator because by mastering technology, educators will find it easier to convey learning material to students especially with the help of learning video media.

Practicum as an alternative to attract students' interest in learning but raises other problems, namely students' difficulties in finding problems, solutions, and analyzing in practicum. Some methods or solutions that have been implemented by teachers are that teachers more often use the guided inquiry learning model. In the learning process, teachers conduct practicums with simple-based reports after students conduct experiments. Reports are made by emphasizing the meaning of "*what is obtained from the practicum?*" and "*what can be understood from the practicum?*". For example, during the DNA isolation practicum, at the last moment after the practicum there is a "*small cloud*" shape and from that, students can think about how DNA can be isolated which can ultimately form as it happens. Using the guided

inquiry learning model is expected to overcome students' difficulties in making practicum report.

Guided inquiry model encourages students to actively explore information about a problem posed by the teacher through the instructions given to find solutions through investigation or experimentation. Guided inquiry according to [39] is a learning model that can help students solve problems with various alternative solutions through the process of thinking and investigation and the teacher only acts as a facilitator and guide. The implementation of learning with guided inquiry according to [40] will be optimal if supported by media in the form of modules.

Another problem that arises in practicum activities where students are less interested in the practicum process according to the material, most students prefer discussions by emphasizing aspects of beauty or skincare. Teachers who face this problem certainly have a solution by linking the learning process with essential material related to skincare. For example, the dangers of using the wrong skincare can cause various diseases such as cancer, as well as dangerous viruses such as HIV. Students will be more enthusiastic if it is associated with essential materials. But over time, the essential material cannot continue because the learning material is more important.

Linking learning materials with essential materials is certainly very useful to increase students' knowledge related to real events around them. In line with research from [41] stated that essential questions and materials are the initial steps that must be taken. The questions submitted must be in accordance with the topic that is aligned with real-world conditions and taken from in-depth investigations. Essential questions are a stage to elicit knowledge, responses, criticisms and ideas from students regarding the project theme that will be raised.

As a pesantren-based school, the use of gadgets is prohibited in the classroom. Students' understanding now depends on *Artificial Intelligence* (AI) which makes students' understanding some wrong. The teacher stated that to train focus so that students enjoy the learning that takes place even though they do not use gadgets, it emphasizes more on practical-based learning with the guided inquiry method. The reason for not allowing the use of gadgets by students is to focus more on learning activities at school and in the boarding school balanced with reading the holy books. Students are also invited to project-based learning with media assisted by equipment in the laboratory and the use of computer laboratories in the practical process. In order to find information about materials and practicums that cannot be searched by students using gadgets, devices for finding information are provided either from teachers or school infrastructure facilities, namely using computer laboratories. The information obtained is useful for verifying the findings, for example when practicing wet preparations in determining xylem and phloem. This method can make students more enthusiastic in learning, thinking critically without involving AI.

Project-based learning provided in learning will train students to think more critically. According to [42] stated that the characteristics of people who think critically will always seek and explain the relationship between the problems discussed and other relevant problems or experiences. Critical thinking is also an organized process in solving problems that involves mental activities that include the ability to: formulate problems, provide arguments, make deductions and inductions, evaluate, and make decisions.

CONCLUSION

Biology learning problems at MA Annur 3 Bululawang include low student motivation, limited scientific facilities, and lack of innovation in learning methods. Male students' motivation to learn tends to be low due to internal and external factors, such as busy learning activities at the boarding school and homesickness. To overcome this, schools can implement a more balanced policy between learning activities and the opportunity to go home regularly to reduce student boredom. In addition, the limitation of practicum tools and materials is a major obstacle in learning biology. A solution that can be applied is the use of alternative practicum tools or materials, such as virtual laboratories, which have proven effective in improving students' science skills and scientific attitudes. On the other hand, students also have difficulty in finding problems and solutions during practicum activities. The application of guided inquiry learning model can be a solution that encourages students to think critically and actively in finding solutions through the investigation process. Relevant practicum and the use of media such as learning videos can also increase student interest, especially if the material is associated with contextual themes such as skincare or health issues. Although there is a ban on the use of gadgets in the school environment, this solution can be balanced with the provision of adequate laboratory facilities to encourage students' hands-on understanding and critical thinking skills. With this approach, it is expected that the problems in learning biology at MA Annur 3 Bululawang can be overcome effectively, so that students become more motivated, skilled, and active in understanding biological concepts.

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CONFLICT OF INTEREST

"The authors declare no conflict of interest."

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